

CONTINUITY SHEET FOR REEL #12.  
"ELEMENTS OF THE AUTOMOBILE"

M T

Part 12

MAY -2 1921

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The Bray Pictures Corporation  
presents  
"ELEMENTS OF THE AUTOMOBILE"  
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Produced for  
The Education  
and Recreation Branch  
General Stall  
under the supervision  
of the  
Motor Transport Division  
Quartermasters Corps  
United States Army.

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Transmission (Continued)

Sub

A study of the gearset.

Sc 1

Close up of outside of gearset. Dissolve to interior complete.

Sub

The clutch shaft, which revolves at engine speed.

Sc 2

Close up of complete interior. Pointer indicates clutch shaft. All the other gears dissolve out. Action of several revolutions of the flywheel and clutch shaft.

Sub

The transmission shaft, which may turn at engine speed, or lower speeds.

Sc 3

Transmission shaft dissolves in. Pointer indicates it.

Sub

The transmission shaft seems to be connected to the clutch shaft but it is not.

Sc 4

Pointer indicates where they seem to be joined.

Sub

It turns loosely in the clutch shaft.

Sc 5

Flywheel and clutch shaft still. Transmission shaft makes several revolutions.

Sub

When the transmission shaft is required to turn at

engine speed, it is locked to the clutch by a sliding gear.

- Sc 6      Sliding gear dissolves in. Flash to very close up. Action of locking and unlocking. Flash to normal close up. Action of flywheel and clutch shaft. Pointer locks sliding gear. Action of transmission shaft. Pointer releases sliding gear.
- Sub      When lower speed (more force) is required, the transmission shaft is driven by a countershaft.
- Sc 7      Countershaft with the two larger gears dissolves in. Pointer indicates them.
- Sub      The countershaft turns at  $\frac{1}{2}$  engine speed, due to the 2 to 1 gearing.
- Sc 8      Pointer indicates the 2 to 1 gearing. Action of flywheel and countershaft.
- Sub      The sliding gear on the transmission shaft is the same size as the small gear on the countershaft.
- Sc 9      Sliding gear dissolves in. Pointer indicates the two.
- Sub      If the two equal size gears are brought into mesh, the transmission shaft will turn at the same speed as the countershaft or  $\frac{1}{2}$  engine speed.
- Sc 10      Sliding gear engages with second speed gear. Action.
- Sub      There are now two speeds available:-  
            (1) Engine speed.
- Sc 11      Gears engaged. Pointer indicates the line along which power is transmitted. Action.
- Sub      (2)  $\frac{1}{2}$  Engine Speed.
- Sc 12      Sliding gear engages with second speed gear. Pointer indicates course along which power is now transmitted. Action.
- Sub      A still lower speed is obtained by another pair of gears.
- Sc 13      Low speed gears dissolve in.
- Sub      These gears are in the proportion of 2 to 1. Therefore, the large one will turn at  $\frac{1}{2}$  the speed of the small one.
- Sc 14      Pointer indicates proportion, then pushes the sliding gear into mesh. Action.



Sub Since the counter-shaft turns at one-half engine speed the transmission shaft now turns at one-fourth engine speed.

Sc 15 Low speed gears in mesh. Action

Sub There are now three different speeds-- engine speed, one-half engine speed and one-fourth engine speed.

Sc 16 Gears in neutral position. Shift to 1st.Action. Pause. Shift to 2nd.Action. Pause. Shift to 3rd. Action.

Sub Shifting the gears is accomplished by the use of a hand lever as shown before.

Sc 17 Power plant complete (cylinders in section. Gear-set in section.). Hand lever dissolves in. Flash to close up. Shift is made to 1st, then to 2nd and then to 3rd.

Sub When neither of the shifting gears are engaged, the gears are said to be in "neutral".

Sc 18 Neutral position. Hand lever moves sideways.

Sub The engine may be in operation, but the power gets no further than the countershaft, even though the clutch is engaged.

Sc 19 Action of flywheel and clutch shaft. Gears remain stationary.

Sub First or low speed.

Sc 20 Shift is made for first speed. Action.

Sub Second or intermediate speed.

Sc 21 First speed gear is shifted out. Second speed gear is engaged. Action.

Sub Third or high speed.

Sc 22 Shift is made from second to high speed. Action.

Sub The clutch plays an important part in gear shifting.

Sc 23 Gears in neutral position. Flywheel is going at high rate of speed (clutch in)/

Sub If a shift were attempted, damage might result.

Sc 24 Pointer indicates low speed shifting gear. Shift is attempted. Sparks are emitted. Repeated several times.

Sub To avoid such damage it is necessary to disengage the clutch before shifting gears.

Sc 25 Clutch is disengaged. Shift <sup>to first</sup> is made. Clutch is then engaged.

Sub Before the engine is started, the gears should be shifted to neutral position.

Sc 26 No action of flywheel. Shift is made from first to neutral. Pointer indicates the action.

Sub The clutch should be disengaged if convenient.

Sc 27 No action of flywheel. Pointer indicates clutch. Clutch disengages.

Sub The engine may now be started.

Sc 28 Long shot. Wheel, propellor-shaft, gearset in section, engine with cylinders in section (clutch out). Engine is started. No action of wheels. Flash to high speed close. Gears in neutral. Action of flywheel only.

Sub Great force is required to move the car at first.

Sub The shift is, therefore, made to the low speed position--

Sc 29 Gears in neutral. Flywheel going at high speed. Pointer indicates low speed gear. Shift is made.

Sub -- and the clutch is let in.

Sc 30 Clutch is let in. Flash to long shot of wheels, propellor-shaft and engine. Engine in action. Gears in low speed position. Wheels turning slowly.

Sub Less force is now required, so the gears are shifted to the second speed position (after first disconnecting the clutch).

Sc 31 Action of gears in low speed position. Clutch is thrown out. Shift is made to second speed position and clutch is let in. Flash to long shot of wheels, propellor-shaft and engine. Wheels going at a higher rate of speed than in the preceding scene.

Sub Now "high" speed.

Sc 32 Second speed position. Clutch is thrown out. Shift is made to high speed position. Clutch is let in. Flash to long shot. Wheels going at high rate of speed.

Sub Special gears are provided for reversing.

Sc 33 Special close view. All gears except reversing gears in.



Gears dissolve out. Reversing idler <sup>gear</sup> dissolves in. Pointer indicates it. Transmission shaft, counter shaft and necessary gears dissolve in. Large gear is shifted for reverse. Action of parts. All gears dissolve in. Action of reversing. Flash to long shot, of wheels, propellor-shaft and engine, wheels going backward. Flash to close up in action. Dissolve to outside view. Fade out.

Sub

End of Part 12

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